

### ABSTRACT OF THE DISCLOSURE

A hard mask **21a** which has an opening for exposing a p-type region **2** defined in a silicon substrate **1** and is made of, for example, a BPSG film is formed. Then, the hard mask **21a** is subjected to isotropic etching using argon gas, to have its edge rounded off, thereby forming an implantation hard mask **21** having a tapered edge. Subsequently, large-angle-tilt ion implantation of an n-type impurity is performed using the implantation hard mask **21** as a mask, thereby forming an n<sup>-</sup> layer **13** having an LDD structure. Thereafter, the implantation hard mask **11** is removed. In this manner, it is possible to perform large-angle-tilt ion implantation using an implantation mask thinner than a conventional implantation mask.